



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/044,744	01/11/2002	Matthew A. Simpson	035-0004	1754
34456	7590	10/14/2003		
TOLER & LARSON & ABEL L.L.P. PO BOX 29567 AUSTIN, TX 78755-9567				
			EXAMINER MCNEIL, JENNIFER C	
			ART UNIT 1775	PAPER NUMBER

DATE MAILED: 10/14/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/044,744

Applicant(s)

SIMPSON ET AL.

Examiner

Jennifer C. McNeil

Art Unit

1775

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 18 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-64 is/are pending in the application.
- 4a) Of the above claim(s) 1-33 and 55-64 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 34-54 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4,6. 6) ☐ Other: \_\_\_\_\_

Art Unit: 1775

## DETAILED ACTION

### *Election/Restrictions*

Applicant's election with traverse of Group II, claims 34-54 in Paper No. 10 is acknowledged. The traversal is on the ground(s) that the subject matter is not independent and distinct, and that different classification is not adequate grounds for restriction. This is not found persuasive because applicant has failed to show that the elected product may not be made by a materially different process as named in the restriction, or that it may not be used in an alternative method.

The requirement is still deemed proper and is therefore made FINAL.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

- (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
- (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
- (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 34, 35, 37-54 are rejected under 35 U.S.C. 102(a) as being anticipated by Otsuki (2001/0003271). Otsuki teaches a processing apparatus with a chamber having therein a high-corrosion resistant sprayed film. The substrate of the chamber may be alumina, silica, or aluminum nitride, or additionally may be aluminum, stainless steel, metal or alloy (col. 8, paragraph 118). The substrate has a film thereon comprising YAG in a thickness of 50-300 microns. Regarding claims 46-48, the chamber is a

Art Unit: 1775

semiconductor-processing tool, such as an etching apparatus. Regarding claims 49-53, the coating may also be deposited on the chuck, on the support base, susceptor, and focusing ring, in addition to the chamber wall. Regarding the limitation of the CTE, the substrate and coating are made of a composition commensurate with those disclosed in the instant specification, and are therefore considered to meet the limitations of the CTE values.

Claims 34, 39, 41, 43-52, and 54 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 343985. JP '985 teaches a silicon wafer-supporting component comprising a substrate of AlN and a coating thereon of YAG. The YAG may be 50-300 microns thick, and the substrate may be an electrostatic chuck. Regarding the limitation of the CTE, the substrate and coating are made of a composition commensurate with those disclosed in the instant specification, and are therefore considered to meet the limitations of the CTE values.

Claims 34-36, 38, and 43-45 are rejected under 35 U.S.C. 102(b) as being anticipated by Vance et al (US 6,106,959). Vance teaches a thermal barrier coating system for a superalloy substrate. The coating comprises YAG with a thickness of 125-500 microns. Regarding the limitation of the CTE, the substrate and coating are made of a composition commensurate with those disclosed in the instant specification, and are therefore considered to meet the limitations of the CTE values.

Claims 34, 39, 41-47, and 54 are rejected under 35 U.S.C. 102(e) as being anticipated by Morita et al (US 6,492,042). Morita teaches a ceramic material body of alumina coated with YAG having a thickness of 150 microns or less. The ceramic body may be used in a CVD apparatus. Regarding the limitation of the CTE, the substrate and coating are made of a composition commensurate with those

Art-Unit: 1775

disclosed in the instant specification, and are therefore considered to meet the limitations of the CTE values.

*Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 34, 35, 39, 41, 43-46, and 54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takao JP 5021628. JP '628 teaches a semiconductor device comprising a substrate of AlN, and a thin film coating thereon of YAG. While JP '628 does not give a specific thickness of the film other than a description of "thin film", it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the coating with a thickness sufficient to prevent interaction between the atmosphere and the AlN substrate. Regarding the limitation of the CTE, the substrate and coating are made of a composition commensurate with those disclosed in the instant specification, and are therefore considered to meet the limitations of the CTE values.

Claims 34, 39, 41-47, and 54 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 410364. JP '364 teaches a device for use in an etching apparatus and comprises a ceramic base with a YAG coating of 2 microns or more. The substrate may comprise alumina. While JP '364 does not give a specific thickness of the film other than a description of greater than 2 microns, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the coating with a thickness sufficient to prevent corrosion of the substrate. Regarding the limitation of the CTE, the

Art Unit: 1775

substrate and coating are made of a composition commensurate with those disclosed in the instant specification, and are therefore considered to meet the limitations of the CTE values.

Claims 34-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Padture et al (US 6,015,630). Padture teaches a substrate of a nickel superalloy and a YAG coating thereon. Padture does not specifically teach the thickness of the coating. It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the coating with a thickness sufficient to prevent corrosion of the underlying substrate. Regarding the limitation of the CTE, the substrate and coating are made of a composition commensurate with those disclosed in the instant specification, and are therefore considered to meet the limitations of the CTE values.

Claim 36 is rejected under 35 U.S.C. 103(a) as being unpatentable over Otsuki (2001/0003271). Otsuki teaches a semiconductor processing tool comprising a chamber made of metals such as aluminum, stainless steel and other alloy, but does not specifically mention superalloys. Absent a showing of unexpected results, it would have been obvious to one of ordinary skill in the art to use a substrate of a composition which is known to be highly effective at high temperatures, such as superalloys, as the substrate of the apparatus of Otsuki.

Art Unit: 1775

*Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer C. McNeil whose telephone number is (703) 305-0553. The examiner can normally be reached on 9-6, M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah Jones can be reached on (703) 308-3822. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-0611.



JCM  
September 30, 2003